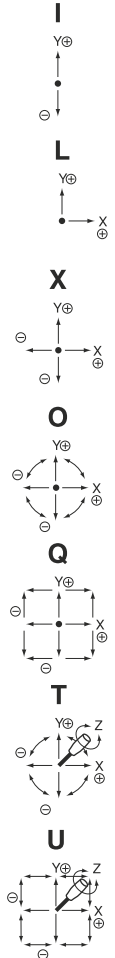
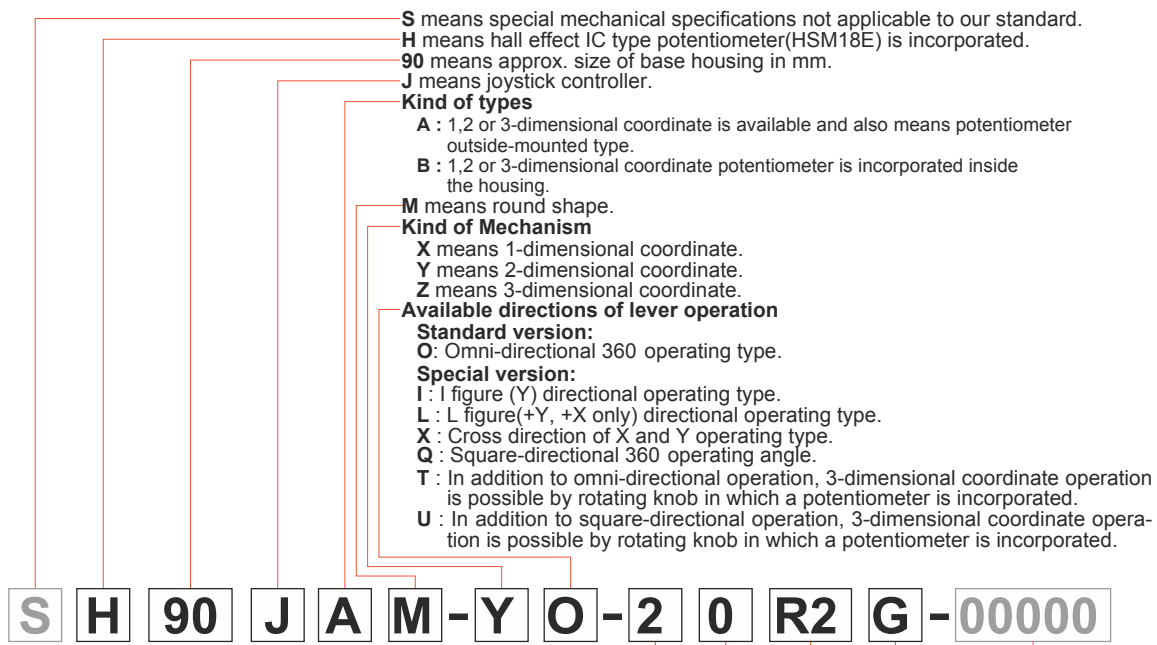




Model H90JA/H90JB

Potentiometer outside mounted type (H90JA) Potentiometer incorporated type (H90JB) Potentiometer with a hall effect IC type resistive element

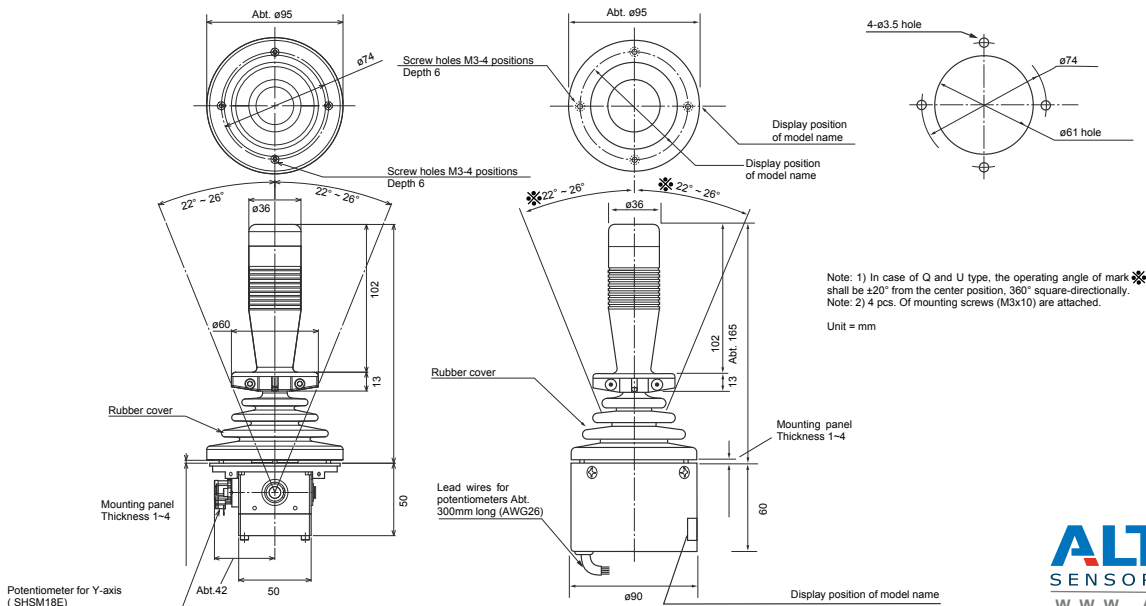
Nomenclature



S H 90 J A M - Y O - 2 0 R 2 G - 00000

- Number of potentiometers to be incorporated**
0 no potentiometer incorporated. **1** 1 potentiometer incorporated.
22 potentiometers incorporated. **33** potentiometers incorporated.
Number of switches to be incorporated
0 no switch incorporated. **1** 1 switch incorporated. **2** 2 switches incorporated.
3 3 switches incorporated. **4** 4 switches incorporated.
5 5 switches incorporated. **6** 6 and over 6 switches incorporated.
9 9 Other switches to your special request.
With spring return device:
R1: with spring return device for 1-dimensional coordinate.
R2: with spring return device for 2-dimensional coordinate.
R3: with spring return device for 3-dimensional coordinate.
Mounting accessories:
G : with dust proof rubber cover.
P : with sub-panel for mounting.
Special part number:
 In case we produce customized product, we add 4-digit or 5-digit branch number.

Standard Dimensions



Standard Specifications

Mechanical performance

Controlling range of operating lever:

- 2-dimensional coordinate type: Omni-directionally approx. $\pm 22^\circ \sim \pm 26^\circ$ operation from center position.
- 3-dimensional coordinate type: Approx. $\pm 45^\circ \sim \pm 50^\circ$ operation from center position of knob in addition to the operating range of 2-dimensional coordinate type.

Operating force: (Standard spring return device : Automatically return to center(Omni-directional type))

X and Y directions: Approx. 2 ~ 12N(200 ~ 1200gf)
 X direction: Approx. 20 ~ 85mNm(200 ~ 850gf·cm)

Operating temperature range: - 20°C ~ 65°

Vibration: 10 ~ 55Hz 98m/s²

Shock: 294m/s²

Mechanical life expectancy: Approx. 10,000,000 operations.

Mass: 2-dimensional coordinate type: Approx. 650g
 3-dimensional coordinate type: Approx. 750g

Electrical performance

Hall effect IC type potentiometer (SHSM18E) incorporated

- Applied voltage: 5V \pm 10% D.C.
- Effective output: Approx. 0.5V ~ 4.5V
- Electrical rotating angle: X and Y-axis: Approx. $\pm 22^\circ$ Z-axis: Approx. $\pm 45^\circ$
- Independent linearity tolerance: $\pm 3\%$ FS
- Load resistance: over 10K Ω

Resolution: Infinitesimal

Dielectric strength: 1 minute at 250V.A.C.

Insulation resistance: Over 100M Ω at 250V.D.C.

EMS durability: 100V/m(80Mhz ~ 1GHz 1KHz sine-wave 80%AM modulation)

ESD durability: ± 8 KV contact ± 15 KV aerial discharge 10 times at 1 second interval, single discharge.

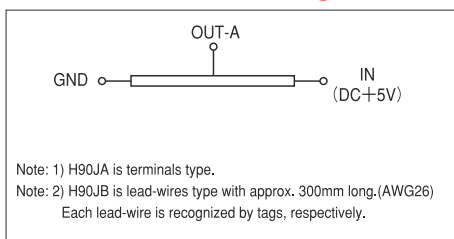


H90JAM-YO-20R2G
 (Standard : 2-dimensional coordinate type)

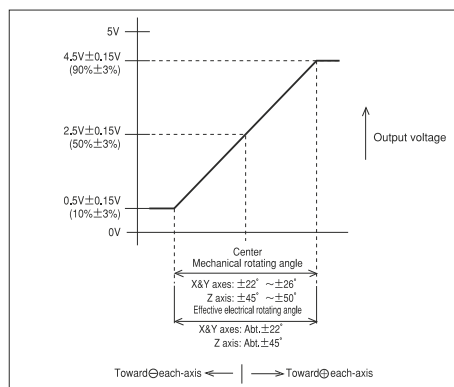


H90JBM-YO-20R2G
 (Standard : 2-dimensional coordinate type)

Terminal Connection Diagram



Output Characteristic

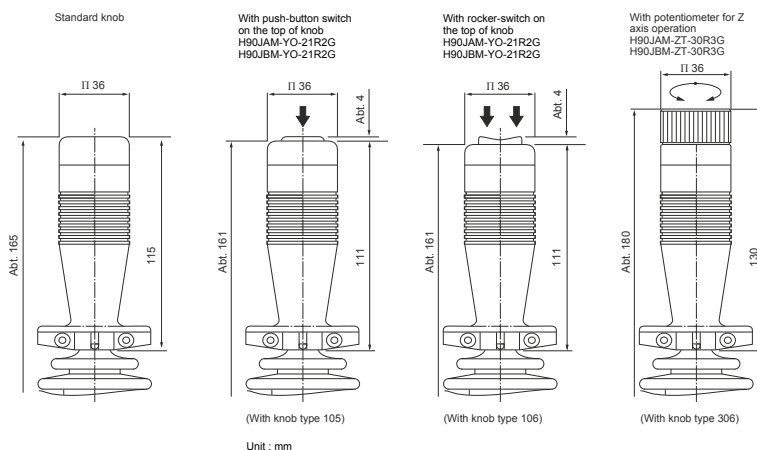


Special Specifications Available

Please see page 47, a table of "Standard and Special Specifications Available".

Regarding kind of output characteristic, dual cross output or dual parallel output instead of single output is also available.

Specially Ordered Versions for Z axis The following versions are available to Z axis knob for both models



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